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Transmitted herewith for filing under 35 U.S.C. 111 and 37 C.F.R. 1.53 is the patent application of:

WILLIAMS et al.

For: **SYSTEM AND METHOD FOR NOTIFYING AN ELECTRONIC BILLING VENDOR OF A CUSTOMER STATUS CHANGE**

Enclosed are:

- ☐ Certificate of Mailing with Express Mail Mailing Label No.
- ☒ **Nine** sheets of drawings.
- ☐ A certified copy of a application.
- ☒ Declaration ☐ Signed. ☒ Unsigned.
- ☐ Power of Attorney
- ☐ Information Disclosure Statement
- ☐ Preliminary Amendment
- ☐ Other:

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	32	- 20 =	12	x $18.00	$216.00
Indep. Claims	6	- 3 =	3	x $78.00	$234.00
Multiple Dependent Claims (check if applicable) ☐					$0.00
				BASIC FEE	$690.00
				TOTAL FILING FEE	$1,140.00

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- ☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. **03-3836** as described below. A duplicate copy of this sheet is enclosed.
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Dated: **March 20, 2000**

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HAND CARRY TO USPTO ON March 20, 2000
cc:

APPLICATION FOR UNITED STATES LETTERS PATENT

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for

SYSTEM AND METHOD FOR NOTIFYING AN ELECTRONIC BILLING VENDOR OF A CUSTOMER STATUS CHANGE

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SYSTEM AND METHOD FOR NOTIFYING AN ELECTRONIC BILLING VENDOR OF A CUSTOMER STATUS CHANGE

BACKGROUND

Field of the Invention

The present invention relates to coordinating information between a merchant and an outside vendor that provides a web-based electronic billing service for customers of the merchant. More specifically, the present invention relates to a system and method for automatically notifying the outside vendor of a change in customer status when a customer contacts the merchant to change her service but fails to contact the outside vendor.

Background of the Invention

Enabled by the development of the Internet, more and more merchants are offering their customers the ability to access billing account information and to pay bills online. Often, to provide this service, merchants contract with web-based billing and payment service providers (referred to herein as "e-billing vendors"). Instead of issuing paper bills, merchants electronically forward billing information to the e-billing vendors, who then post periodic bills on the Internet. Once posted on the Internet, the e-billing vendors provide secured access through which customers can review their own accounts, but not the accounts of other customers. E-billing vendors also often manage electronic fund transfers between customer financial accounts and merchant accounts. In dispensing with paper-based checks, these e-billing vendors, such as CheckFree®, enable customers to complete such

transactions as paying bills online, accessing full payment histories, scheduling payments in advance, scheduling variable and recurring payments, reviewing pending payments, authorizing payments to particular merchants, and storing bills electronically for future reference.

For enrollment in an electronic billing and payment service, the merchant instructs its existing customers to log onto the e-billing vendor's website and register for the service. The customer designates the financial institution that will receive and pay the customer's bills, and the particular financial account number through which fund transfers will be processed. The financial institution is any business that supports electronic billing and payment, such as online banks, Internet portals, brokerage credit unions, and personal finance software packages. As a part of enrollment, the e-billing vendor furnishes the customer with a user identification ("user ID") and password for secured access to the website. The e-billing vendor also establishes a mailbox for the customer, accessible only by using the user ID and password. This mailbox serves as the location at which the e-billing vendor presents bills for payment, and the customer reviews and pays bills.

Once the customer completes registration, the e-billing vendor forwards the registration information to the merchant in the form of a request-for-enrollment file. The merchant validates and edits the request-for-enrollment file, qualifies the customer, and returns a response file to the e-billing service reporting either that the customer's account is ready for electronic fund transfers or that the request for enrollment is denied (*e.g.*, if the account number is invalid or if the enrollee is not a

customer of the merchant). If enrollment is accepted, the merchant activates the e-billing capabilities for the customer's account and modifies its internal accounting system to forward the customer's bills to the e-billing vendor, rather than to the customer by mail. For tracking purposes, the merchant and e-billing vendor generally use the service account number assigned to the customer by the merchant, *e.g.*, in the case of a telephone company, the service account number would be the customer's telephone number. The e-billing vendor associates this account number with the previously registered user ID, password, financial institution, financial account number, and mailbox of the customer.

Following enrollment, for each billing cycle (*e.g.*, monthly), the merchant electronically forwards the billing information in a bill image data file to the e-billing vendor, preferably using file transfer protocol (FTP). By reading the account number associated with the bill image data file, the e-billing vendor locates the customer's mailbox. The e-billing vendor then web-enables the bill image data file by attaching hypertext markup language (HTML) commands and posts the bills to the mailbox for presentment and payment. Once posted, the customer can review the charges and approve the transfer of funds from her financial account to the merchant. For quality control, the e-billing vendor confirms during each billing cycle that billing information is received for each active enrolled customer, to assure that each customer can review and pay bills in a timely manner.

Because a merchant typically issues bills to different customers on different billing cycles such that bills go out every day, merchants transfer billing

information to the e-billing vendor on a daily basis. As a part of the tracking and quality control functions, the e-billing vendor and merchant provide each other with error reports for each daily transfer. The error reports detail instances in which, for example, customer accounts do not match or cannot be located. Although the error reports enable the merchant and the e-billing vendor to identify mismatched account numbers and to make the appropriate corrections to synchronize the systems, the reports require a manual review by the system operators and do not eliminate the need for further personal communication between the merchant and e-billing vendor to rectify the problems.

The principal source of errors in these daily transfers of billing information is customer-requested changes in service that affect account numbers. Because the merchant and the e-billing vendor rely on the account number to synchronize a transfer, if a customer desires a change in service that affects her account number, both the merchant and also the e-billing vendor must be notified to ensure consistent billing. For such a situation, e-billing vendors instruct customers to always contact both the merchant and also the e-billing vendor to report the change. In this manner, the merchant knows to issue any subsequent billing based on the requested change and the e-billing vendor knows what type of billing information to expect from the merchant. Two typical examples of changes in service that affect the account number are account termination and account number change. To better illustrate these changes in the context of a particular industry, the following discussion addresses these service changes in the context of the telecommunications

industry, in which an account termination is a disconnected telephone line and an account number change is a change of phone number (account number).

If a customer follows the merchant's instructions, both the e-billing vendor and the merchant know that an account number has been canceled or changed, and can coordinate their billing processes accordingly. Figures 1 and 2 illustrate this situation in which a conscientious customer contacts the merchant and the e-billing vendor to coordinate a disconnected line (Figure 1) or an account change (Figure 2). The reference numerals in Figures 1 and 2, as well as Figures 3-6, indicate the order in which the steps occur.

Despite the merchant's best efforts in instructing customers, customers frequently request the change from the merchant but neglect to contact the e-billing vendor. Figure 3 shows an example of this scenario for account termination. If a customer contacts the telephone company to disconnect her telephone line but does not inform the e-billing vendor of the change, when the next billing cycle comes due, the e-billing vendor will expect the usual bill from the telephone company, but the telephone company will forward nothing. As a result, an error will appear on the error report and the e-billing vendor will have to contact the telephone company to investigate the missing billing information. This investigation is a burdensome clerical task.

Similarly, Figure 4 shows an example of the problematic scenario for account number change. Here, a customer contacts only the telephone company to switch her service from one telephone number to another – in effect canceling an account

and opening another. As a result, during the next billing cycle, the e-billing vendor will receive billing information for the new account that it has not registered and does not recognize. In addition, the e-billing vendor will be looking for missing billing information for the cancelled account. Once again, the error report will indicate the mistakes and the e-billing vendor will have to waste resources contacting the merchant to coordinate the changes.

Therefore, because customers inevitably fail to contact both the merchant and the e-billing vendor when requesting a service that affects an account number, the merchant needs a way of automatically notifying the e-billing vendor without resorting to manually reviewed error reports and post hoc clerical fixes.

SUMMARY OF THE INVENTION

The present invention is a system and method for a merchant to automatically notify an outside e-billing vendor of customer account status changes that affect the transfer of billing information between the merchant and the e-billing vendor. The method of the present invention reads an update file containing service order activities, searches among the activities in the update file for customers enrolled in an e-billing service, determines which of those enrolled customers received a service change that affected their account number, copies the information associated with each affected account number into a record formatted as required by the e-billing vendor, and transmits the record to the e-billing vendor to synchronize the merchant and e-billing vendor accounts.

To implement this method, the primary components of the system include an update file, a search application, a format application, a communication application, a network, and an e-billing vendor. The update file contains, among other customer information, records of executed customer service orders occurring during a predetermined interval, preferably daily. The search application reads the update file, searches for service orders performed for customers enrolled in an e-billing service, and records account change information in a notification file. The format application configures the notification file in a format compatible with the e-billing vendor. The communication application sends the notification file to the e-billing service application through the network. Finally, the e-billing vendor updates the customer e-billing account information using the data provided by the notification file.

Figures 5 and 6 broadly illustrate the method by which the present invention synchronizes the merchant and e-billing vendor accounts. For account termination, Figure 5 shows generally that upon disconnecting a customer's telephone line, the telephone company (merchant) issues a final paper bill to the customer, and automatically notifies the e-billing vendor of the account termination. Consequently, the e-billing vendor cancels the telephone bill portion of the customer's online billing service and confirms that no further billing information is expected from the telephone company. Thus, the disconnection will not result in an entry on the error report.

With regard to an account number change, Figure 6 shows generally that upon changing account numbers, the telephone company (merchant) sends to the e-billing vendor a notification of the account change followed by the billing information for the new account. The notification reports the cancellation of the original account number and the establishment of the new account under the customer's name. As a result, the e-billing vendor recognizes that no further billing information will be forthcoming for the original account and that future billing information will be forthcoming for the new account. Thus, the e-billing vendor will not generate any entries on the error report.

Accordingly, it is an object of the present invention to provide a system and method for a merchant to automatically notify an outside e-billing vendor of a change in customer status when a customer contacts the merchant to change her service but does not contact the outside e-billing vendor.

It is another object of the present invention to provide a system and method for automatically synchronizing account information between merchants and their e-billing vendors.

It is another object of the present invention to help reduce error reports generated by customers who do not contact both a merchant and its associated e-billing vendor to request and report service changes that affect their accounts.

These and other objects of the present invention are described in greater detail in the detailed description of the invention, the appended drawings, and the attached claims.

DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic diagram illustrating the method by which customers should notify a telephone company and the e-billing vendor of a terminated account.

Figure 2 is a schematic diagram illustrating the method by which customers should notify a telephone company and the e-billing vendor of an account number change.

Figure 3 is a schematic diagram illustrating the method by which customers typically only notify a telephone company of a terminated account.

Figure 4 is a schematic diagram illustrating the method by which customers typically only notify a telephone company of an account number change.

Figure 5 is a schematic diagram illustrating a preferred embodiment of a method according to the present invention for terminated accounts.

Figure 6 is a schematic diagram illustrating a preferred embodiment of a method according to the present invention for an account number change.

Figure 7 is a schematic diagram of a preferred embodiment of a system architecture according to the present invention.

Figure 8 is a table describing an example of a record format required by an e-billing account database.

Figure 9 is a flowchart outlining a preferred embodiment of a method according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

System Architecture:

Figure 7 is a preferred embodiment of the present invention. On the most general level, the system architecture of the preferred embodiment of the present invention enables applications of a merchant system 700 to communicate with applications of an e-billing vendor system 702 through a network 704. Network 704 is preferably the Internet.

In a preferred embodiment of the present invention, merchant system 700 includes an update file 710, a search application 712 in communication with update file 710, a format application 714 in communication with search application 712, and a communication application 716 in communication with format application 714 and network 704.

E-billing vendor system 702 includes a communication application 720 in communication with network 704, an account update application 722 in communication with communication application 720, an e-billing account database 724 in communication with account update application 722, and a web application 726 in communication with e-billing account database 724. Although the components within merchant system 700 and e-billing vendor system 702 are shown separately, one skilled in the art would appreciate that the components of each could be combined into a single application or a single hardware component.

Within this architecture, the components perform the following functions. Update file 710 stores the merchant's service order activities as well as other

customer update information. Examples of the service order activities include the addition or deletion of service features, routine service inquiries by customers (*e.g.*, repair requests), account number changes, and account termination. Each entry in update file 710 is associated with a customer account number, and includes a flag (or other indicator) if the entry corresponds to an electronic billing customer, and a description, code, or other indicator to mark a service activity that affects an account number(s).

At a predetermined time interval, for example, at the close of business of each day, the activities (and other customer update information) for that time interval are downloaded to update file 710. Any number of suitable applications can receive and record the service activities, and download the activities to the update file 710. However, in a preferred embodiment of the present invention, a customer billing system 709 receives and records service activities and downloads the activities, in the form of update file 710, to a customer information database 711. Customer billing system 709 maintains billing records for customers and produces cyclical billing statements for each customer. Customer billing system 709 is preferably a system software including COBOL and Assembly language programs running on an IBM 370 Mainframe, such as the Customer Record Information System (CRIS) of BellSouth, Atlanta, Georgia. Customer information database 711 is in communcation with customer billing system 709 and stores the customer data that customer billing system 709 accesses and updates.

While update file 710 is being downloaded from customer billing system 709 to customer information database 711, search application 712 reads the service order activity files from update file 710 and searches for entries associated with e-billing service customers and with service orders that affect account numbers. Search application 712 then copies the entries that meet the search criteria into a notification file, and forwards the notification file to format application 714 or to a server accessible to format application 714.

In a preferred embodiment of the present invention, search application 712 is a Unitech™ software package application that runs on an IBM 370 Mainframe. Preferably, once search application 712 reads the update file 710 and collects the entries satisfying the search criteria into a notification file, search application 712 transmits the notification file to a server in communication with format application 714, using a file transfer protocol that supports file transfer between servers.

In a further preferred embodiment of the present invention, search application 712 searches several update files generated in several separate regional operating sites. In this embodiment, search application 712 reads the multiple update files and collects the service order activities meeting the search criteria. A file transfer system running on an IBM 370 Mainframe transfers the service order activities from each regional operating site to a central server, on which a standard software utility (*e.g.*, IBM's IEBGENER) merges the service order activities into the notification file. The notification file is then transmitted to a server in

communication with format application 714, using a file transfer protocol that supports file transfer between servers.

Format application 714 translates files (and data entries in the files) configured in the record format of update file 710 into the record format required by e-billing account database 724. The record format required by e-billing account database 724 can be any suitable format. Preferably, the e-billing vendor record format includes one or more of customer contact information, type of service activity performed ("action"), and account numbers. As an exemplary embodiment of the present invention, the table in Figure 8 lists a record format required by an e-billing vendor. As shown in Figure 8, the record format conveys, among other things, the customer's contact information, the type of service activity performed ("action"), the date of the service activity, and the old and new (if applicable) account numbers involved in the service activity. The action codes correspond to service activities that affect account numbers, namely, "activate," "delete," and "change." In the preferred embodiment of the present invention, format application 714 is written with Microsoft Access™.

Once the notification file has been formatted, format application 714 sends the notification file to communication application 716. Communication application 716 preferably uses File Transfer Protocol (FTP – a standard Internet protocol) to forward the notification file through network 704 to communication application 720 of e-billing vendor system 702, as shown in Figure 7. Preferably, for security,

communication application 716 also forwards the notification file through a firewall 718 separating merchant system 700 from e-billing vendor system 702.

Communication application 720 receives the notification file, preferably using FTP, and forwards it to account update application 722. Once e-billing vendor system 702 has received the notification file, e-billing vendor system 702 updates the customer information stored on its own system. Preferably, the following components assist e-billing vendor system 702 in updating its customer information.

Account update application 722 reads each entry in the notification file and, using the account number, consults e-billing account database 724 for the corresponding e-billing customer account. Based on the action noted in the notification file, account update application 722 updates e-billing account database 724. For example, for a changed account number, account update application 722 would cancel the old customer account in e-billing account database 724 and establish a new customer account under the new account number provided by the notification file.

With e-billing account database 724 updated, web application 726 accesses the new account information and posts it in individual mailboxes on the website.

System Operation:

Figure 9 is a flowchart outlining the method implemented by the above-described system architecture. The flowchart tracks an example service activity

from the request by the customer through notification of the e-billing vendor and adjustment of the website postings.

While the method described herein and illustrated in the flowchart contains many specific examples of information flow steps, these steps should not be construed as limitations on the scope of the invention, but rather as examples of method steps that could be used to practice the invention. As would be apparent to one of ordinary skill in the art, many other variations on the system operation are possible, including differently grouped and ordered method steps. Accordingly, the scope of the invention should be determined not by the embodiments illustrated by these examples, but by the appended claims and their equivalents.

As shown in Figure 9, in step 100, a customer contacts merchant system 700 to request a change in service. As in a normal course of operation, in step 102 merchant 300 records the service order activity in customer billing system 709. If the customer is a participant in an e-billing service, customer billing system 709 flags the entry for the service order activity in step 104.

Steps 100 through 104 repeat in response to different service request calls from different customers. Then, at some periodic interval, for example once a day at the close of business, the merchant's customer billing system 709 downloads the service activity entries for that interval (*e.g.*, that day) to update file 710 in step 106.

In step 108, customer billing system 709 transmits update file 710 to merchant's customer information database 711.

In step 110, as update file 710 is being transmitted from customer billing system 709 to customer information database 711, search application 712 reads update file 710 and searches for flagged entries, indicating customers who use an e-billing service. In step 112, search application 712 conducts a search of only the flagged entries to determine which entries report service order activities that affect account numbers. This second search yields entries detailing such activities as terminated accounts and changed accounts, which, in the context of the telecommunications industry described herein, correspond to disconnected lines and changed telephone numbers, respectively. Search application 712 identifies these entries by searching the descriptions, codes, or other indicators noting activities that affect account numbers.

Optionally, instead of searching first for customers that use e-billing, the present invention could search first for activities that affect account numbers and, of those entries, search for e-billing customers. In any case, the optimal search method searches for the more limiting criterion first, *e.g.*, if typically there are more entries for activities that affect account numbers than there are for e-billing customers, then preferably search application 712 would search first for the entries corresponding to e-billing customers.

In step 114, once search application 712 has identified entries satisfying its search criteria, search application 712 collects the identified entries into a notification file. In the case of multiple operating regional sites, search application 712 collects the entries from each site and transmits them using a file transfer

system to a central location (*e.g.*, a central server), where the entries are merged into the notification file.

In step 116, search application 712 forwards the notification file to format application 714 or to a server accessible to format application 714. In step 118, format application 714 translates the record format of the notification file – which is in the format required by update file 710 – into the record format required by e-billing account database 724. In step 120, format application 714 forwards the re-formatted notification file to communication application 716.

In step 122, communication application 716 of merchant system 700 delivers the notification file through network 704 to communication application 720 of e-billing vendor system 702. Preferably, network 704 is the Internet and communication applications 716 and 720 support File Transfer Protocol (FTP).

In step 124, communication application 720 transmits the notification file to account update application 722, which reads the affected account numbers. Then, in step 126, account update application 722 consults e-billing account database 724, accesses the accounts corresponding to the affected account numbers, and applies the changes noted in the notification file. Thus, for example, if the action code of an entry in the notification file is "D" to indicate a deleted account, account update application 722 closes that portion of the e-billing account so that e-billing vendor system 702 no longer expects billing information from merchant system 700 for that account. As another example, if the action code is "C" to indicate a changed account, account update application 722 closes the e-billing account corresponding

to the old account number and opens an e-billing account for the new account number.

Finally, with the accounts updated, in step 128 web application 726 accesses e-billing account database 724 to post bills in a customer's mailbox on the website of e-billing vendor system 702.

The foregoing disclosure of embodiments of the present invention has been presented for purposes of illustration and description. It is not intended to be exhaustive or to limit the invention to the precise forms disclosed. Many variations and modifications of the embodiments described herein will be obvious to one of ordinary skill in the art in light of the above disclosure. The scope of the invention is to be defined only by the claims appended hereto, and by their equivalents.

WHAT IS CLAIMED IS:

1. A method for notifying an electronic billing vendor of customer status changes comprising:

(a) flagging entries, in an update file, that correspond to electronic billing customers;

(b) searching the update file for flagged entries that indicate an account change;

(c) reformatting the flagged entries that indicate account changes; and

(d) transmitting the reformatted flagged entries that indicate account changes to the electronic billing vendor.

2. The method of claim 1, wherein the update file stores one entry for each service order activity.

3. The method of claim 1, wherein the entries are placed in the update file at an interval.

4. The method of claim 1, wherein searching the update file looks first for the flagged entries, and looks second for the account changes among the flagged entries.

5. The method of claim 1, wherein searching the update file looks first for entries indicating account changes, and looks second for the flagged entries among the entries indicating account changes.

6. The method of claim 1, wherein reformatting the flagged entries that indicate account changes translates the flagged entries that indicate account changes into a record format required by the electronic billing vendor.

7. The method of claim 6, wherein the record format includes data selected from the group consisting essentially of date of activity, customer contact information, old account number, new account number, and action.

8. The method of claim 7, wherein the action is an activity selected from the group consisting essentially of delete, change, and activate.

9. The method of claim 1, wherein transmitting the flagged entries that indicate account changes to the electronic billing vendor occurs through a network using file transfer protocol.

10. The method of claim 1, wherein the account changes are selected from the group consisting essentially of an account termination and an account number change.

11. A system for notifying an electronic billing vendor of customer status changes comprising:

(a) an update file adapted to store service order activities;

(b) a search application in communication with the update file, wherein the search application searches the service order activities for entries that

correspond both to customers of the electronic billing vendor and to service order activities that affect account numbers;

(c) a format application in communication with the search application, wherein the format application places the entries in a format compatible with the electronic billing vendor; and

(d) a communication application in communication with the format application, wherein the communication application transmits the entries through a network to the electronic billing vendor.

12. The system of claim 11, wherein the format compatible with the electronic billing vendor includes data selected from the group consisting essentially of date of activity, customer contact information, old account number, new account number, and action.

13. The system of claim 12, wherein the action is an activity selected from the group consisting essentially of account deletion, account change, and account activation.

14. The system of claim 11, wherein the update file, the search application, the format application, and the communication application are provisioned with a merchant.

15. The system of claim 11, wherein the search application, the format application, and the communication application are a single application.

16. The system of claim 11, wherein the update file is generated by a customer billing system and is transmitted from the customer billing system to a customer information database.

17. A method for notifying an electronic billing vendor of customer status changes comprising:

(a) changing customer services;

(b) recording the changed services in a customer billing system;

(c) flagging the changed services if the changed services involve an electronic billing customer;

(d) downloading a period of the changed services to an update file;

(e) searching the update file for flagged changed services that affect account numbers;

(f) copying the flagged changed services that affect account numbers into a notification file;

(g) formatting the notification file into a format used by the electronic billing vendor; and

(h) making the formatted notification file available to the electronic billing vendor.

18. The method of claim 17, wherein the format used by the electronic billing vendor comprises data selected from the group consisting essentially of date of activity, customer contact information, old account number, new account number, and action.

19. The method of claim 17, wherein changed services that affect account numbers are account terminations and account number changes.

20. The method of claim 17, wherein the period is daily.

21. The method of claim 17, wherein making the notification file available comprises transmitting the notification file through a network.

22. The method of claim 21, wherein the network is the Internet and the notification file is transmitted through a firewall.

23. The method of claim 17, wherein searching the update file comprises looking for the flagged changed services first if the flagged changed services are fewer than changed services that affect account numbers, and looking for the changed services that affect account numbers first if the changed services that affect account numbers are fewer than the flagged changed services.

24. The method of claim 17, wherein downloading further comprises transmitting the update file from the customer billing system to a customer information database, and searching the update file occurs while the update file is being transmitted.

25. An application for notifying an electronic billing vendor of customer status changes comprising:

(a) a file of service order activities;

(b) a search function that searches the service order activities for entries corresponding both to electronic billing customers and account changes that affect account numbers;

(c) a format function that translates the entries from a first record format to a second record format; and

(d) a communication function that transmits the entries to the electronic billing vendor.

26. The application of claim 25, wherein the file provides indicators for service order activities corresponding to electronic billing customers and provides indicators for service order activities corresponding to account changes that affect account numbers, and wherein the search function searches for the indicators.

27. The application of claim 25, wherein the first record format is compatible with the file and the second record format is compatible with the electronic billing vendor.

28. The application of claim 25, wherein the communication application uses file transfer protocol over a network.

29. A system for notifying an electronic billing vendor of customer status changes comprising:

(a) an update file adapted to store service order activities;

(b) a search application in communication with the update file, wherein the search application searches the service order activities for entries that correspond both to customers of the electronic billing vendor and to service order activities that affect account numbers;

(c) a format application in communication with the search application, wherein the format application places the entries in a format compatible with the electronic billing vendor;

(d) a communication application in communication with the format application, wherein the communication application transmits the entries through a network to the electronic billing vendor;

(e) a second communication application in communication with the network, wherein the second communication application receives the entries;

(f) an account update application in communication with the second communication application, wherein the account update application reads the entries and matches the entries to existing electronic billing accounts;

(g) an electronic billing account database in communication with the updated application, wherein the electronic account database stores the electronic billing accounts; and

(h) a web application in communication with the electronic account database, wherein the web application accesses the electronic billing accounts to post billing information on a website.

30. The system of claim 29, wherein the second communication application, the account update application, the electronic billing account database, and the web application are provisioned with the electronic billing vendor.

31. The system of claim 29, wherein the communication application, the account update application, and the web application are a single application.

32. A method for notifying an electronic billing vendor of customer status changes comprising:

(a) flagging entries in an update file corresponding to electronic billing customers;

(b) searching the update file for flagged entries that indicate an account change;

(c) reformatting the flagged entries that indicate account changes;

(d) transmitting the reformatted flagged entries that indicate account changes to the electronic billing vendor;

(e) reading account numbers associated with the flagged entries that indicate account changes;

(f) matching the account numbers to electronic billing account numbers in an electronic billing account database of the electronic billing vendor; and

(g) updating the electronic billing account numbers with information from the flagged entries that indicate account changes.

Google Exhibit 1009

ABSTRACT OF THE DISCLOSURE

A system and method by which a merchant automatically notifies an outside e-billing vendor of customer account status changes that affect the transfer of billing information between the merchant and the e-billing vendor. The method reads an update file containing service order activities, searches among the activities in the update file for customers enrolled in an e-billing service, determines which of those enrolled customers received a service change that affected their account number, pulls the information associated with each affected account number, places the information in a record formatted as required by the e-billing vendor, and transmits the record to the e-billing vendor to synchronize the account numbers between the merchant and the e-billing vendor.

1694302

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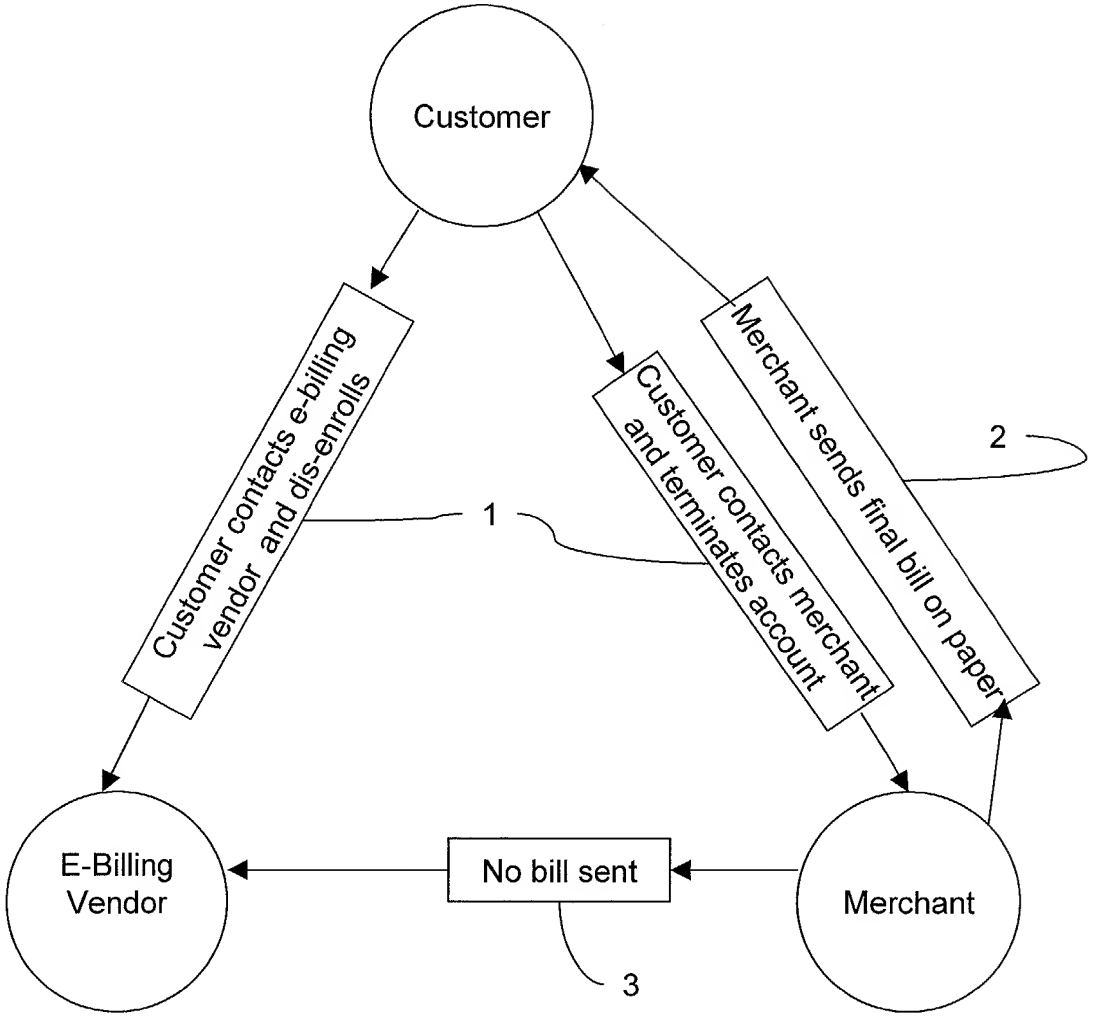

Figure 1

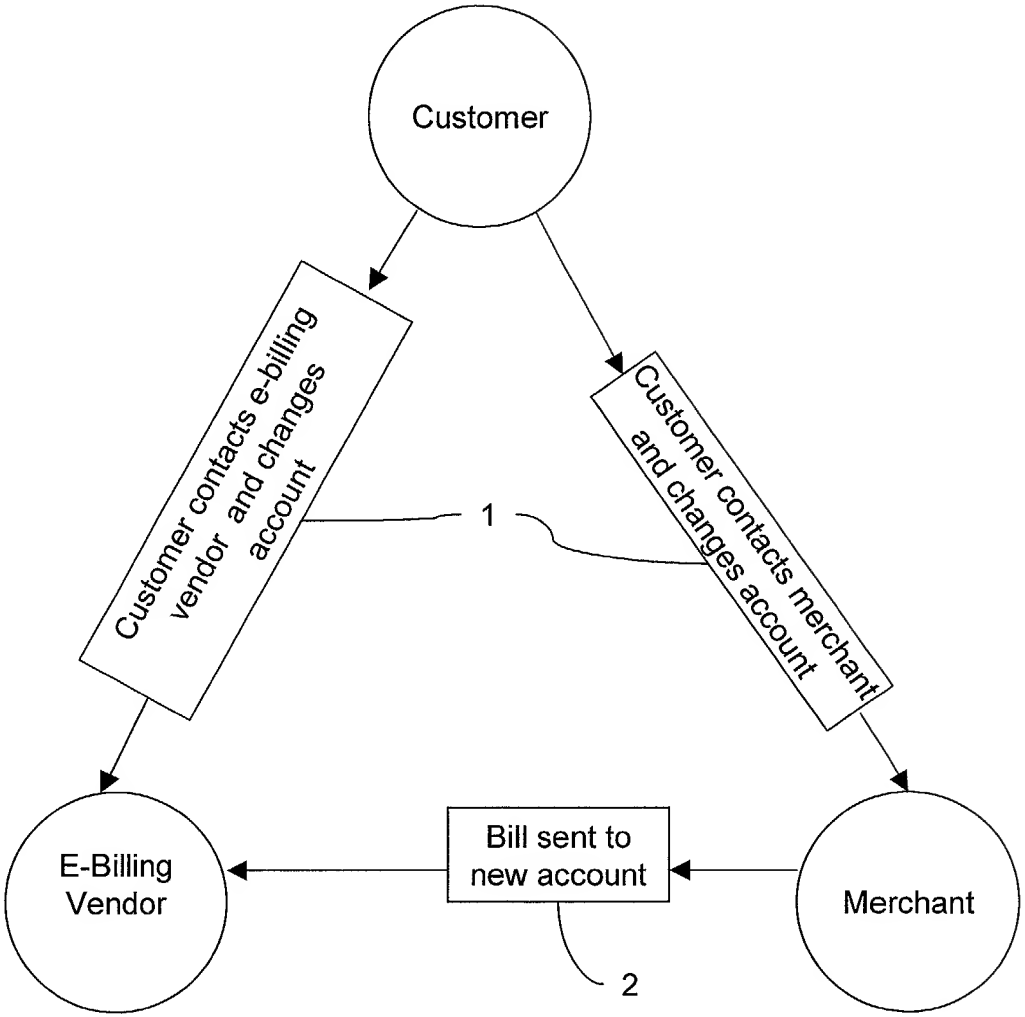
Customer
Customer contacts e-billing vendor and changes account
Customer contacts merchant and changes account
1
E-Billing Vendor
Bill sent to new account
Merchant
2

Figure 2

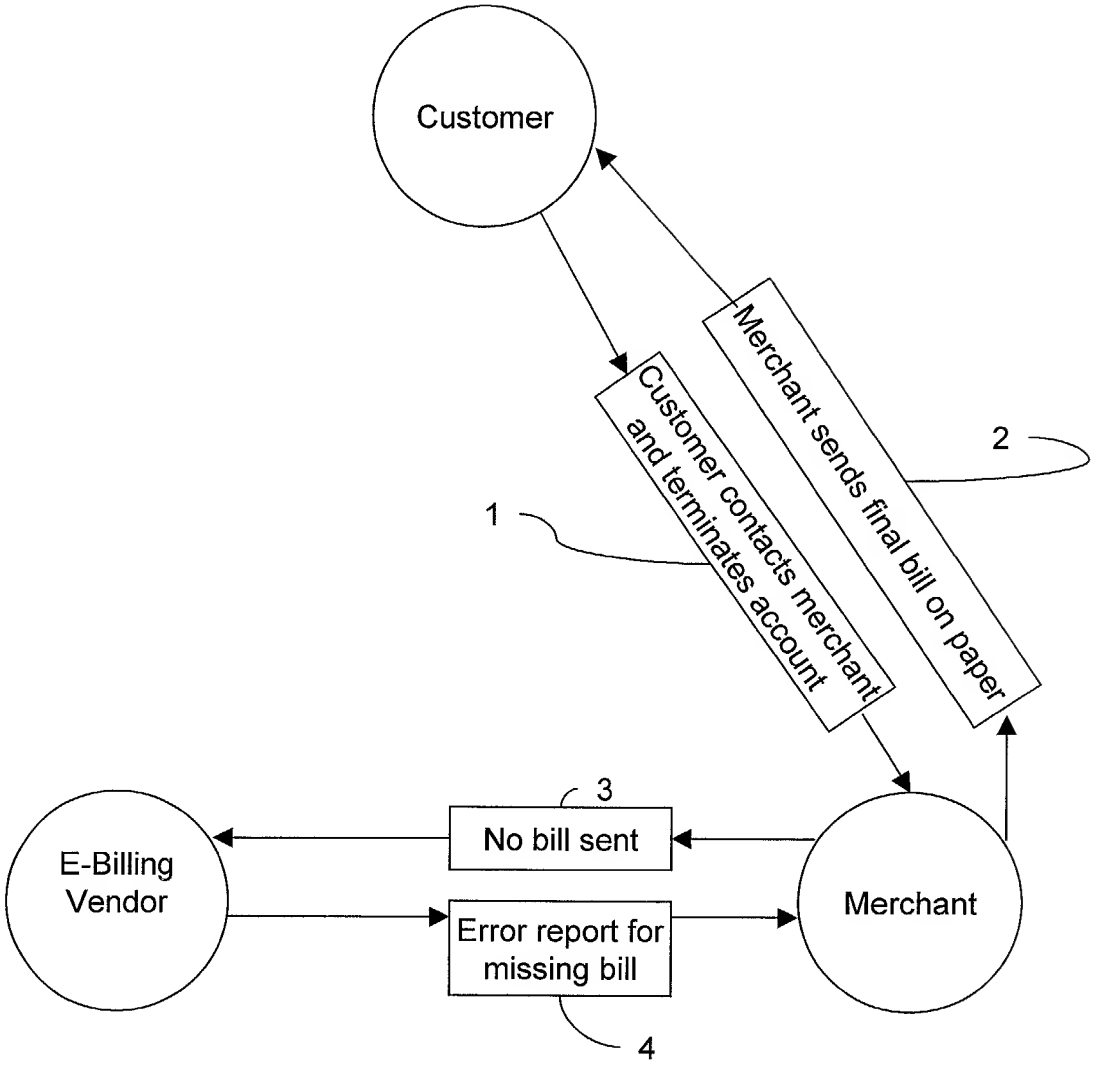
Customer
Customer contacts merchant and terminates account
Merchant sends final bill on paper
1
2
3
4
E-Billing Vendor
No bill sent
Error report for missing bill
Merchant

Figure 3

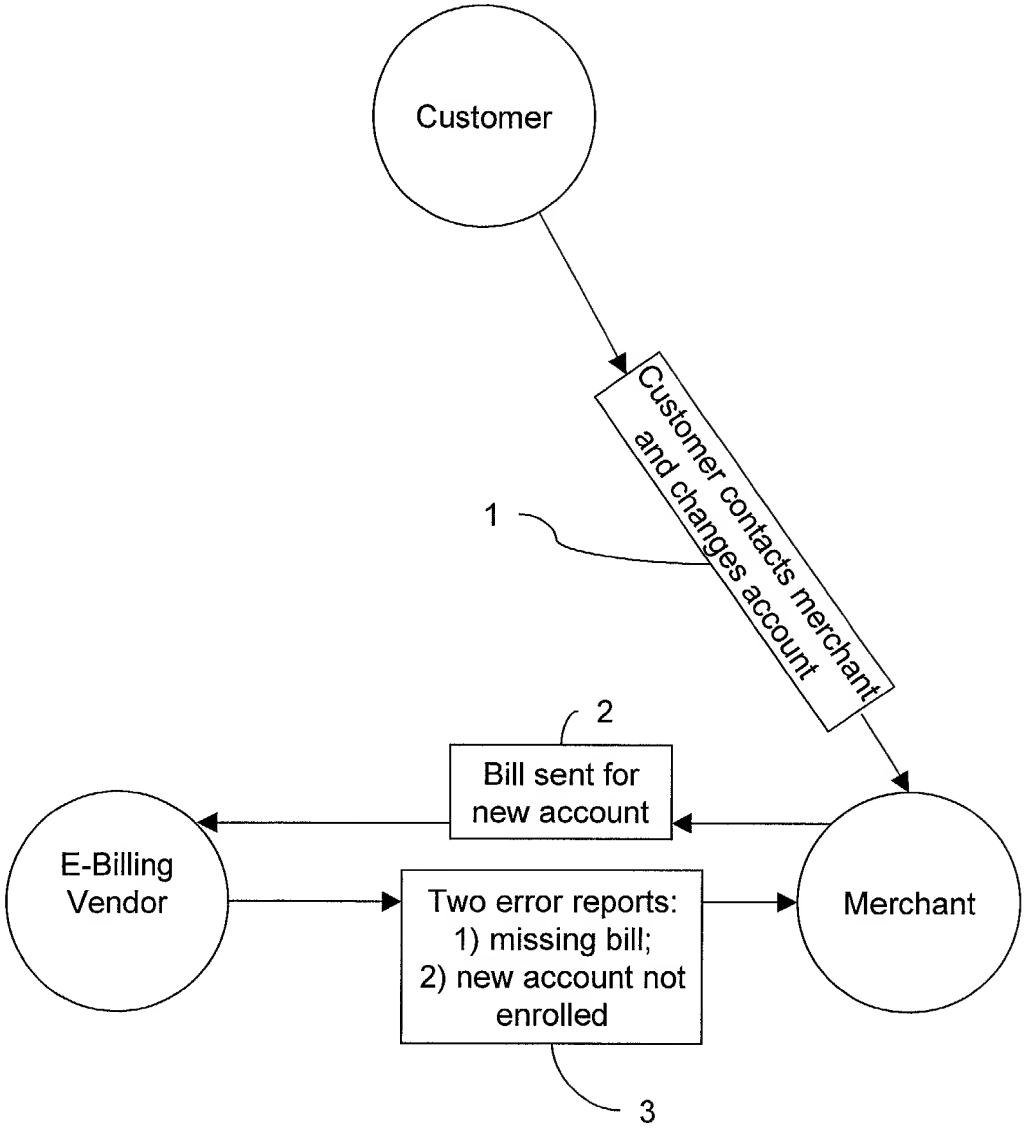
Customer
Customer contacts merchant and changes account
1
2
Bill sent for new account
E-Billing Vendor
Two error reports:
1) missing bill;
2) new account not enrolled
Merchant
3

Figure 4

0002E0 F2STE560

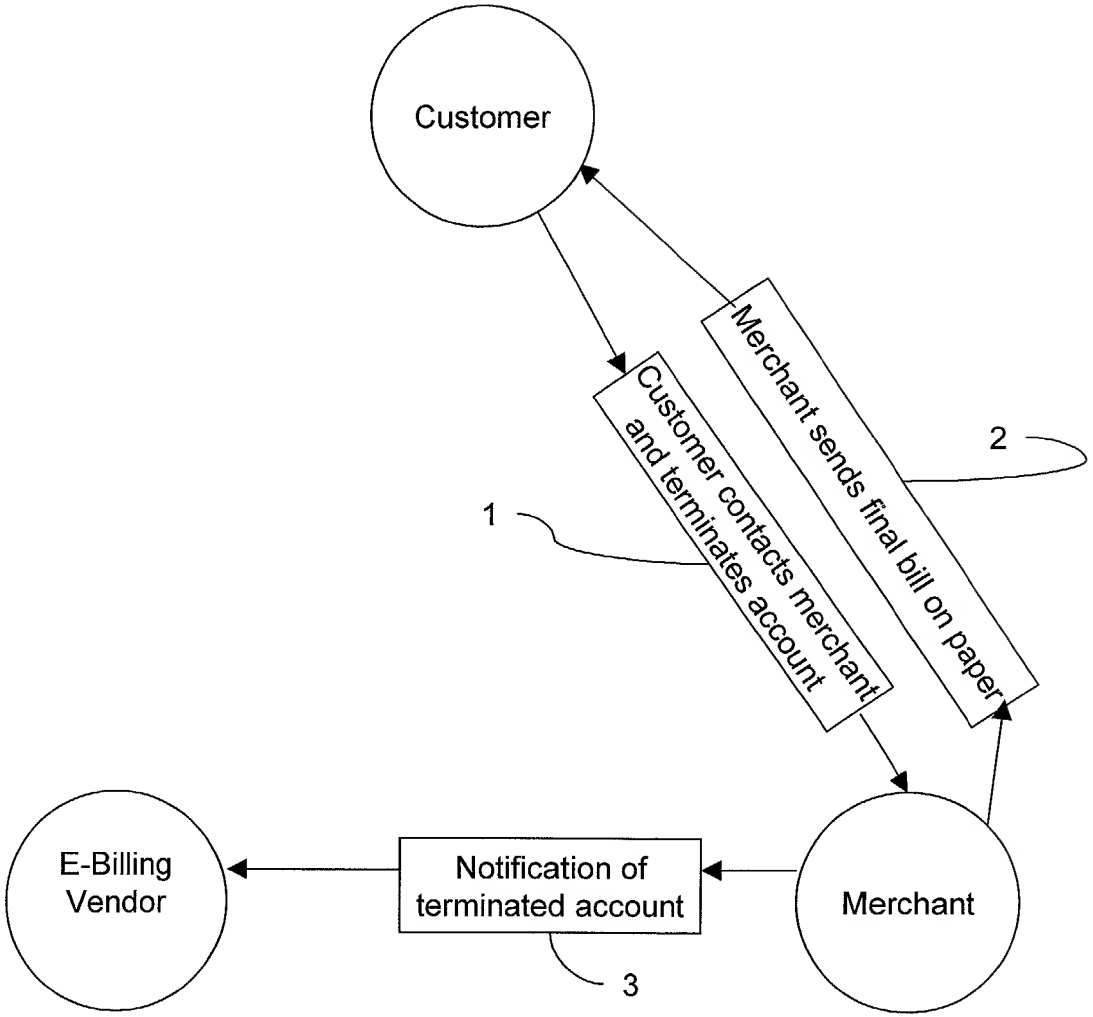

Figure 5

0002600 "T25T6560

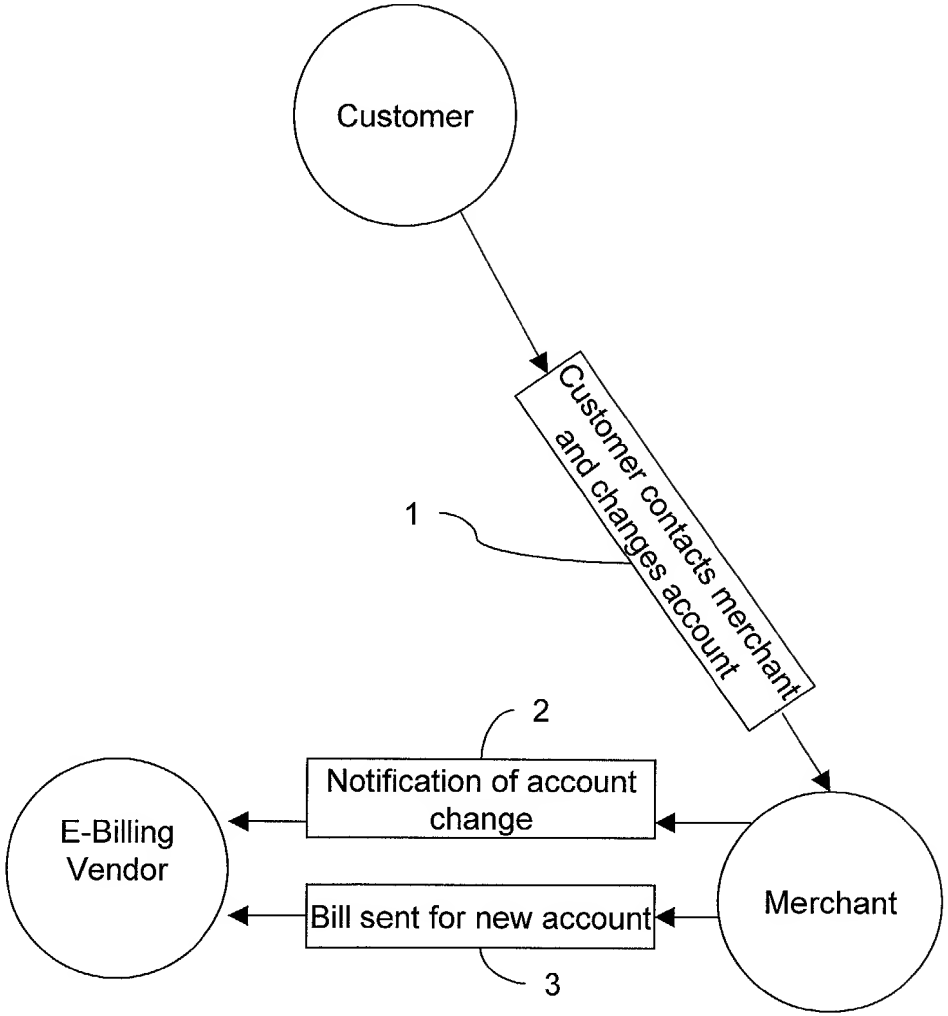

Figure 6

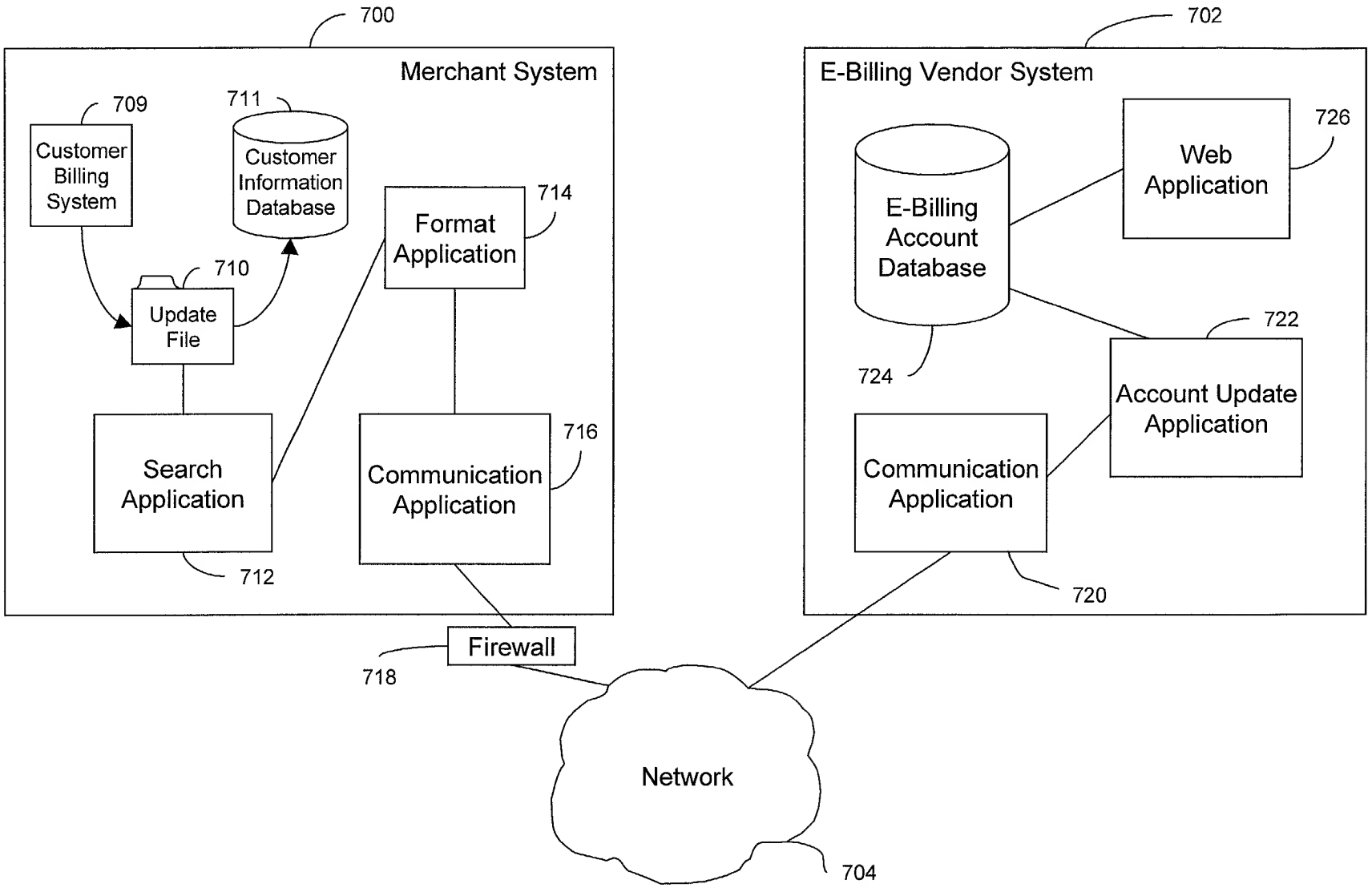
700
Merchant System
709
Customer Billing System
711
Customer Information Database
710
Update File
714
Format Application
Search Application
712
Communication Application
716
Firewall
718
Network
704
702
E-Billing Vendor System
726
Web Application
E-Billing Account Database
724
722
Account Update Application
Communication Application
720

Figure 7

Field Name	Start Position	Field Length	Comments
Record Type	1	1	"3"
Future Use	2	10	
Action Code	12	2	A- Activate, D - Delete, C - Change
Activity Date	14	8	(YYYYMMDD)
Future Use	23	13	
Last Name	35	35	
First Name	70	25	
Middle Name	95	25	
Address Line 1	120	35	
Address Line 2	155	35	
City	190	30	
State Abbreviation	220	2	
Zip Code	222	15	
Future Use	237	20	
Account Number	257	30	
Old Account Number	287	30	For Use with Change of Account Records. If this field is populated the new Account number should appear in the previous field. This field would only be populated if there is a "C" in the Action Code Field.
Future Use	317	184	

Figure 8

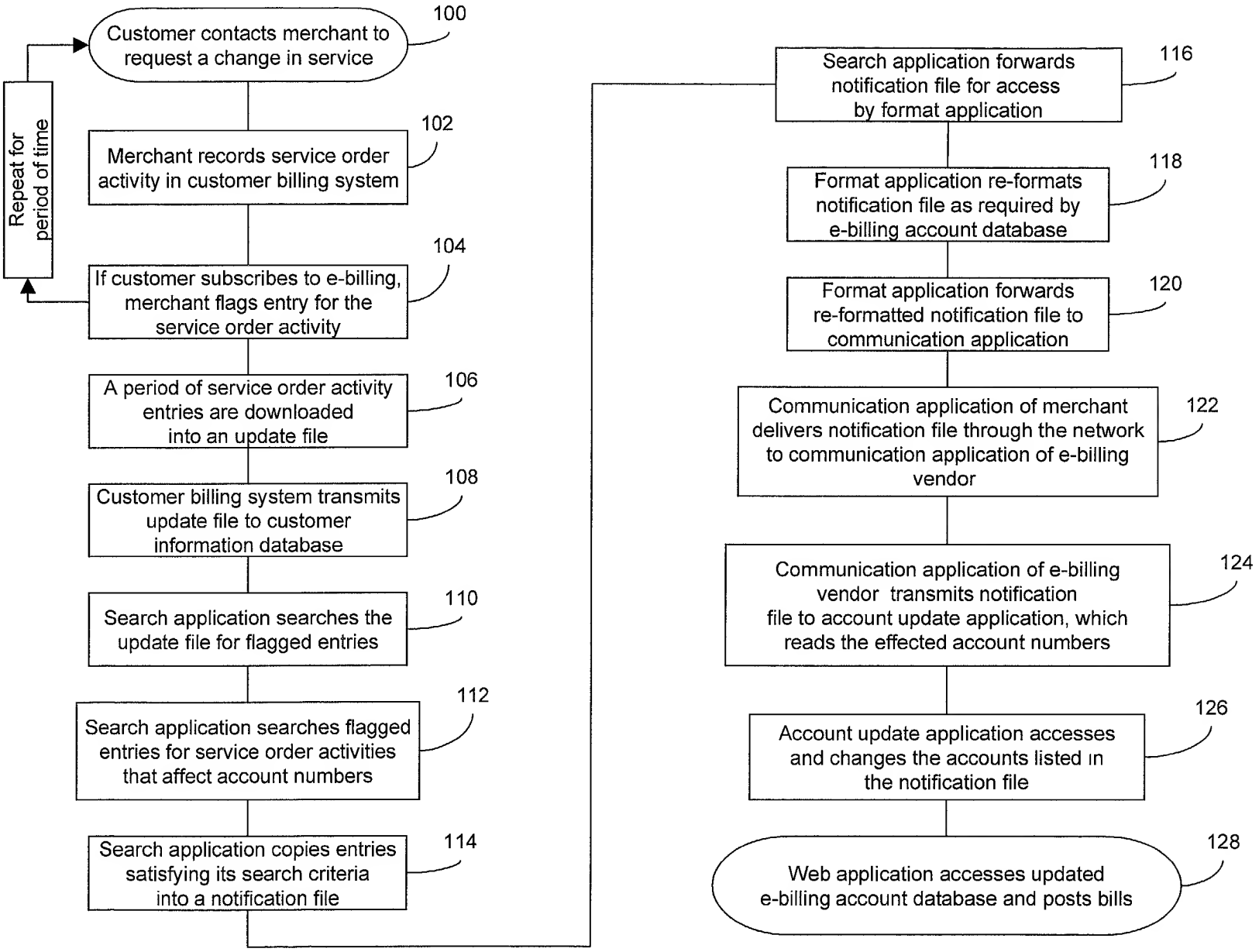
Customer contacts merchant to request a change in service
100
Repeat for period of time
Merchant records service order activity in customer billing system
102
If customer subscribes to e-billing, merchant flags entry for the service order activity
104
A period of service order activity entries are downloaded into an update file
106
Customer billing system transmits update file to customer information database
108
Search application searches the update file for flagged entries
110
Search application searches flagged entries for service order activities that affect account numbers
112
Search application copies entries satisfying its search criteria into a notification file
114
Search application forwards notification file for access by format application
116
Format application re-formats notification file as required by e-billing account database
118
Format application forwards re-formatted notification file to communication application
120
Communication application of merchant delivers notification file through the network to communication application of e-billing vendor
122
Communication application of e-billing vendor transmits notification file to account update application, which reads the effected account numbers
124
Account update application accesses and changes the accounts listed in the notification file
126
Web application accesses updated e-billing account database and posts bills
128

Figure 9

Docket No.
BS99-191

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

SYSTEM AND METHOD FOR NOTIFYING AN ELECTRONIC BILLING VENDOR OF A CUSTOMER STATUS CHANGE

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on _____ as United States Application No. or PCT International Application Number _____

and was amended on _____

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Not Claimed
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	☐
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	☐
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	☐

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Doc Code: DEC Doc Description: Declaration

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